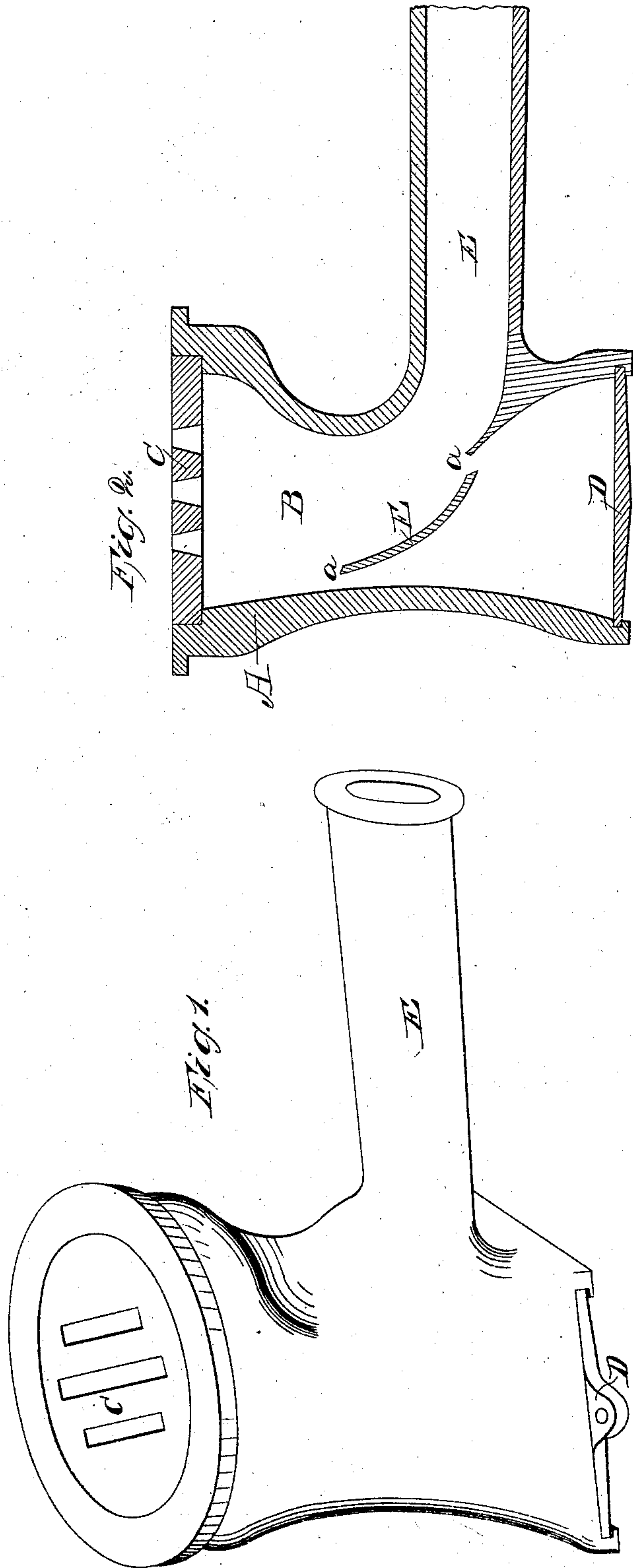


J. DORWART.  
TUYERE.

No. 7,900.

Patented Jan. 14, 1851.





# UNITED STATES PATENT OFFICE

JOSEPH DORWART, OF MORGANTOWN, PENNSYLVANIA.

## IMPROVEMENT IN TUYERES.

Specification forming part of Letters Patent No. 7,900, dated January 14, 1851.

### *To all whom it may concern:*

Be it known that I, JOSEPH DORWART, of Morgantown, in the county of Berks and State of Pennsylvania, have invented a new and useful Improvement in Blacksmiths' Tuyeres, of which the following is a full, clear, and exact description, reference being had to the accompanying drawings, which form part of this specification, and in which—

Figure 1 represents a view of my improved blacksmith's tuyere, and Fig. 2 is a vertical longitudinal section of the same.

My improved tuyere consists of an upright vessel having a chamber within it which is closed at the top by a movable grate and at the bottom by a sliding shutter. The vessel is furnished with a wind-pipe, by means of which the blast from the bellows enters the chamber. The wind-pipe at its junction with the chamber curves upward to cause the air to impinge more directly upon the grate-bars, and a curved partition is introduced within the chamber in such manner that while it assists in turning the blast upward it allows any particles which may fall through the grate-bars to pass it and lodge at the bottom of the chamber, where they cannot obstruct the blast, and whence they are removed by withdrawing the sliding shutter. The lower extremity of this partition extends below the orifice of the wind-pipe, and its form is such that an eddy is formed at this point, which facilitates the descent of cinders and thus prevents them from obstructing the wind-pipe.

In the accompanying drawings, A is the upright vessel forming the body of the tuyere. It contains within it a chamber B, which is closed at the top by a grate C, which can be easily removed and replaced whenever it becomes necessary to perform these operations; or it may be shifted on its seat to any position most suitable for heating articles of peculiar shape. The bottom of this chamber is closed by a sliding plate D, which is easily withdrawn from the tuyere to allow any dirt which may lodge upon it to fall out.

A lateral pipe E is cast fast to the body of the tuyere. This pipe at its junction with

the chamber B is curved upward, as represented in Fig. 2, to lead the blast more directly against the lower face of the grate C. Immediately opposite the entrance of this pipe into the chamber is the curved partition F. This crosses the chamber from side to side, but does not touch it at the upper and lower edges of the partition, spaces *a a* being left at these points, which allow any dirt which may fall through the grate to pass to the bottom of the chamber. This curved partition by its form and position assists in turning the blast upward, thus preventing the reverberation that would take place if the blast impinged directly against the side of the chamber opposite to that at which the pipe enters. The blast being thus conducted to the upper part of the chamber distributes itself equally through the spaces in the grate, and thus produces a more equable combustion of the fuel, while at the same time this partition not only permits the particles falling through the grate to pass freely to the bottom of the chamber through the spaces left between the upper and lower edges of the partition and the sides of the chamber, but prevents the stoppage of the orifice of the wind-pipe by creating an eddy below the blast-pipe, which facilitates the descent of cinders to the chamber beneath.

What I claim in the foregoing as my invention, and desire to secure by Letters Patent, is—

The curved partition in the air-chamber placed opposite the orifice of the wind-pipe, with its lower edge extending beneath this orifice, the arrangement and construction of the partition being such that it serves the double purpose of directing the blast upward and facilitating the descent of the cinders, as herein set forth.

In testimony whereof I have hereunto subscribed my name.

JOSEPH DORWART.

Witnesses:

DAVID FINZER,

DANL. I. BRUNER.